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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/563,283	01/03/2006	Takashi Yoshimine	OMY-0053	4328
23353 7590 05/30/2007 RADER FISHMAN & GRAUER PLLC LION BUILDING 1233 20TH STREET N.W., SUITE 501 WASHINGTON, DC 20036			EXAMINER MILLIKIN, ANDREW R	
			ART UNIT 2837	PAPER NUMBER
			MAIL DATE 05/30/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/563,283	YOSHIMINE, TAKASHI	
	Examiner	Art Unit	
	Andrew Millikin	2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 8-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 8-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>030207</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osborn (U.S. Patent No. 397,815, hereafter '815) in view of Schoerkmayr (U.S. Patent No. 4,730,533, hereafter '533).

Claim 1: '815 teaches a keyboard instrument, comprising: a keyboard portion; a support portion (see Figs. 1-2) that supports the keyboard portion; and a performance support plate (D), which is marked with a scale, being disposed on the keys slidable in a plane where the keys are arranged so that the marked scale is superposed on each of the keys when the performance support plate is slid.

'815 does not teach that the keyboard is made only of keys in which tone intervals are arranged so as to repeat an arrangement of whole step, whole step, half step, whole step, whole step, whole step and half step. '533 teaches that omitting black keys of a piano simplifies the operation the piano and allows disabled or retarded adults and children an opportunity to learn playing melodies with keyboard instruments (column 1, lines 64-68 & column 2, lines 1-18).

Claim 2: '815 teaches that the keys are all the same color (page 1 of specification, lines 54-55).

3. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over '815 and '533 as applied to claim 1 above and further in view of Nagasaka et al. (U.S. Patent No. 4,513,650, hereafter '650).

Claim 3: '533 and '815 teach the keyboard instrument as set forth in claim 1, but do not teach a first storing means for storing an information of sounds of a piece of music; a setting means for setting a first key information that is an information on a destination of transposition of the piece of music; a second storing means for storing the first key information set by the setting means; a judging means for judging a second key information that is a key of the piece of music based on the information of sounds of a piece of music stored by the first storing means; and a transposing means for transposing sounds of the piece of the music stored by the first storing means to sounds corresponding to the first key information based on the second key information judged by the judging means.

'650 teaches a first storing means for storing an information of sounds of a piece of music ((8); in column 1, lines 50-52 state that the sequencer can memorize a chord or melody of music); a setting means for setting a first key information that is an information on a destination of transposition of the piece of music (5); a second storing means for storing the first key information set by the setting means (7); a judging means for judging a second key information that is a key of the piece of music based on the information of sounds of a piece of music stored by the first storing means (column 1, lines 59-68 & column 2, lines 1-4); and a transposing means ((2, 10), CPU and program memory switch) for transposing sounds of the piece of the music stored by the first

storing means to sounds corresponding to the first key information based on the second key information judged by the judging means (column 2, lines 36-61).\

'650 also teaches a first storing means for storing an information of sounds of a piece of music and a first key information that is a key of the piece of music (8); a setting means for setting a second key information that is an information on a destination of transposition of the piece of music (5); a second computer memory for storing the second key information set by the setting means (7); a transposing means for transposing sounds of the piece of the music stored by the first storing means to sounds corresponding to the second key information based on the second key information stored by the second storing means (column 2, lines 36-61).

'650 teaches that by using these features, users are freed from having to operate flats and sharps while still allowing them to play melodies that have flats and sharps in them (see abstract; column 1, lines 17-33; column 2, lines 1-4). As such, the combination of '815, '533, and '650 would consist of the keyboard of '815 having only keys in which tone intervals are arranged so as to repeat an arrangement of whole step, whole step, half step, whole step, whole step, whole step and half step, but the accidental notes would still have been included in the strings and hammers associated with the accidental notes in order to have allowed the elements of '650 to have operated accidental notes at the proper time in predetermined situations. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the features of '650 with those of '815 and '533 in order to have allowed players to

Art Unit: 2837

have played melodies with flats and sharps in them without having to directly play flats and sharps.

4. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over '815 and '533 as applied to claim 1 above and further in view of Stelzer (EP 71688, hereafter '688).

'815 and '533 teach the keyboard instrument as set forth in claim 1, but do not teach an automatic performance unit capable of being placed on the support portion: wherein the automatic performance unit has; a storing means for an information of a piece of music, a plurality of key touch devices disposed so as to be touchable with each of the keys from thereabove and a controller that controls each of the key touch devices based on the information of the piece of music.

'688 teaches an automatic performance unit (3) capable of being placed on the support portion ("which can be mounted to cover the keyboard"): wherein the automatic performance unit has a storing means for an information of a piece of music (13), a plurality of key touch devices disposed so as to be touchable with each of the keyboards from thereabove (4) and a controller that controls each of the key touch devices based on the information of the piece of music (12). '688 teaches that this device allows simple mechanical operation of a keyboard instrument for automatic performance (see abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the automatic performance unit of '688 with the obvious combination of '815 and '533 outlined above in order to have

allowed the keyboard of '815 and '533 to have been simply operated via automatic performance.

5. Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over '815 and '533 as applied to claim 1 above and further in view of Meisel (U.S. Patent No. 6,194,643, hereafter '643) and Brann (U.S. Patent No. 5,550,321, hereafter '321).

Claim 9: '815 and '533 teach the keyboard instrument as set forth in claim 1, but do not explicitly teach a vibratable string disposed corresponding to each of the keys; a hammer that strikes a string in conjunction with a touched one of the keys; or a pedal mechanism for shifting the hammer by half a step to each of the strings. However, using vibratable strings disposed corresponding to each of the keys, a hammer that strikes a string in conjunction with a touched one of the keys, and shifting the hammer so that it strikes different strings is well known in the art to be inherent in any piano, as can be seen in '643. '643 teaches a keyboard instrument having keys and a support portion (Fig. 54) including a vibratable string disposed corresponding to each of the keys; a hammer that strikes a string in conjunction with a touched one of the keyboards (see column 1, lines 25-48); and shifting the hammer so that it strikes different strings (column 1, lines 25-48). However, none of '815, '533, or '643 teaches a pedal mechanism for shifting the hammer by half a step to each of the strings. '321 teaches that using a pedal (40) to change a natural note into a flat or a sharp can help to provide a simple yet versatile system to provide a full spectrum of tones (see abstract; see also column 1, lines 57-67 & column 2, lines 1-10). It would have been obvious to one of

Art Unit: 2837

ordinary skill in the art at the time the invention was made to have used a pedal mechanism for shifting the hammer by a half step like that of '321 with the obvious combination of '815 and '533 in order to have provided a simple yet versatile system to provide a full spectrum of tones while still not requiring users to actuate accidental notes on the keyboard.

Claims 10-12: '643 teaches a damper pedal (column 1, lines 25-48) and '321 teaches a pedal (40) disposed on a higher pitch sound side that can make sounds of the keyboard higher or lower by a half step (see abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used one pedal to make the sounds of the keyboard higher by a half step and another pedal to make the sounds of the keyboard lower by a half step in order to have made it easier to think about how to produce sharps and flats; and to have arranged the pedals in a suitable way, such as on a lower or higher pitch sound side, in order to have made it clear to a user which pedal corresponded to flat and which corresponded to sharp. It would have also been obvious to one of ordinary skill in the art at the time the invention was made to have combined the pedals of '321 and '643 with the obvious combination of '815 and '533 in order to have allowed users to have used a damper pedal (which is standard to pianos) and to have allowed users to have performed a full spectrum of tones while still not requiring them to actuate accidental notes on the keyboard.

Claims 11-12: '643 teaches a pedal mechanism that shifts/turns the hammers a little to one side (be it left, towards a lower pitch sound side, or right,

towards a higher pitch sound side) in a direction where the respective strings are arranged so that only a single string instead of two or three strings is struck (column 1, lines 25-48). In order to have the hammer move and hit fewer strings, it must move in a direction perpendicular to the direction the strings are arranged.

Response to Arguments

6. Applicant's arguments with respect to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

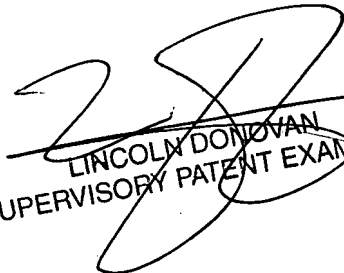
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Millikin whose telephone number is 571-270-1265. The examiner can normally be reached on M-R 7:30-5 and 7:30-4 Alternating Fridays (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on 571-272-1988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ARM


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